

PART 1 **GENERAL**

1.1 **DESCRIPTION**

- .1 This section specifies supply, placement and compaction of rock fill, Class “A” and Class “B” in the area indicated and existing excavated material, as required or as directed by Departmental Representative.

1.2 **MEASUREMENT FOR PAYMENT**

- .1 Rock Fill: Supply and placement of rock fill will be measured by the cubic metre placed measure (CMPM). The volume of material will be determined in place from measurements taken prior to and at completion of the work. Include the cost of all plant, labour, equipment, and materials required to complete the work.
- .2 Class “A”: The supply and placement of Class “A” will be measured in cubic metres of materials supplied and installed in the work. Include all costs in the unit price including plant, material, equipment and labour.
- .3 Class “B”: The supply and placement of Class “B” will be measured in cubic metres of materials supplied and installed in the work. Include all costs in the unit price including plant, material, equipment and labour.
- .4 No measurement for payment to be made under this section for the backfilling of suitable excavated material. Suitable material will be excavated material that meets the requirements of rock fill as specified below. Include the cost for temporary storage, placement, and compaction of the suitable excavated material to complete the work as specified in the lump sum price arrangement. Refer to Section 35 20 23 - Dredging.

PART 2 **PRODUCTS**

2.1 **ROCK FILL**

- .1 Rock fill will be of hard, durable, evenly graded blasted stone having a maximum diameter of 300 mm in major portion of fill and a maximum diameter of 150 mm in upper 600 mm of rock fill. Fill material will contain not more than 6 percent by weight passing the 25.4 mm sieve. Rock fill to be evenly graded within the limits specified.
- .2 Use of shale rock or slate will not be permitted.

2.2 **CLASS “A”**

- .1 Class “A” fill will consist of clean, hard, durable, crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp break when plotted on a semi-chart.
- | | |
|------------------------|-----------|
| ASTM Sieve Designation | % Passing |
|------------------------|-----------|

ASTM Sieve Designation	% Passing
19.0 mm	100
9.51 mm	50-80
4.76 mm	35-60
1.20 mm	15-35
0.300 mm	7-20
0.075 mm	3-6 (Pit Source) 3-8 (Rock Source)

- .2 Physical Requirements of Class "A":
 - .1 Liquid Limit ASTM D4318: Maximum 25
 - .2 Plasticity Index ASTM D4318: Maximum 0
 - .3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35
 - .4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.
 - .5 CBR: AASHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.
- .3 Material shall be considered unsuitable even though particle sizes are within the specified gradation limits if particle shape or any other characteristics precludes satisfactory compaction or fails to provide a roadway suitable for traffic. If, in the opinion of the Departmental Representative, an improved particle shape can be achieved by using a different crushing unit for that proposed by the Contractor, then the Contractor shall supply and use a crushing unit of the type directed by the Departmental Representative.
- .4 Class "A" shall be processed by crushing and when necessary, to eliminate surplus fines passing 4.76 mm sieve, shall be screened and washed.

2.3 CLASS "B"

- .1 Class "B" fill will consist of clean, hard, durable, crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp break when plotted on a semi-chart.

ASTM Sieve Designation	% Passing
50.8 mm	100
25.4 mm	50-100
4.76 mm	20-55
1.20 mm	10-35
0.300 mm	5-20
0.075 mm	2-6 (Pit Source) 2-8 (Rock Source)

- .2 Physical Requirements of Class "B":
 - .1 Liquid Limit ASTM D4318: Maximum 25
 - .2 Plasticity Index ASTM D4318: Maximum 0

- .3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35
- .4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.
- .5 CBR: AASHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.
- .3 Material shall be considered unsuitable even though particle sizes are within the specified gradation limits if particle shape or any other characteristics precludes satisfactory compaction or fails to provide a roadway suitable for traffic. If, in the opinion of the Departmental Representative, an improved particle shape can be achieved by using a different crushing unit for that proposed by the Contractor, then the Contractor shall supply and use a crushing unit of the type directed by the Departmental Representative.
- .4 Class "B" shall be processed by crushing and when necessary, to eliminate surplus fines passing 4.76 mm sieve, shall be screened and washed.

PART 3 EXECUTION

3.1 PLACING ROCK FILL

- .1 Only rock fill material approved by Departmental Representative will be placed. Material will be placed uniformly across full cross-section in layers not exceeding 300 mm loose depth.
- .2 Use suitable earth moving and surface grading equipment to place and spread rock fill in continuous and uniform horizontal layers.
- .3 Compact rock fill after each 300 mm lift.
- .4 Place Class "A" after Class "B" sub-base surface is inspected and approved by Departmental Representative.
- .5 All side slopes to be constructed stable as indicated on the drawings.
- .6 Reinstate new wharf end as indicated on the drawings.

END OF SECTION